REPLACEMENT PART REFERENCE GUIDE, ZGBDC20-33HP+ AN-30-014

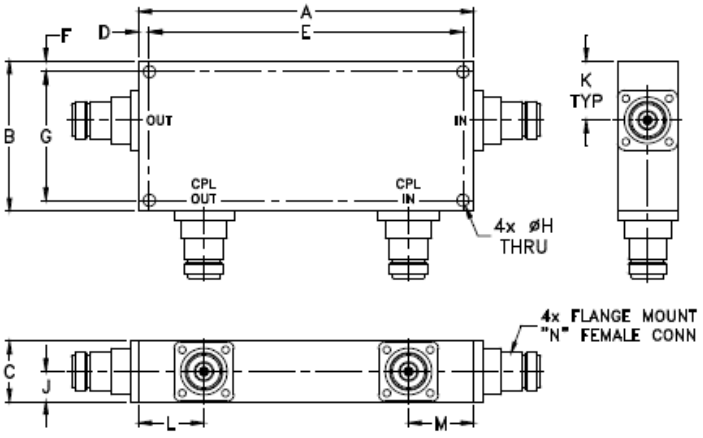
ORIGINAL PART:	ZGBDC20-33HP+	
REPLACEMENT PART:	ZGBDC20-372HP+	

Replacement Part has been judged by Mini-Circuits Engineering as a suitable replacement to Original Part[a]

MECHANICAL DIMENSIONS

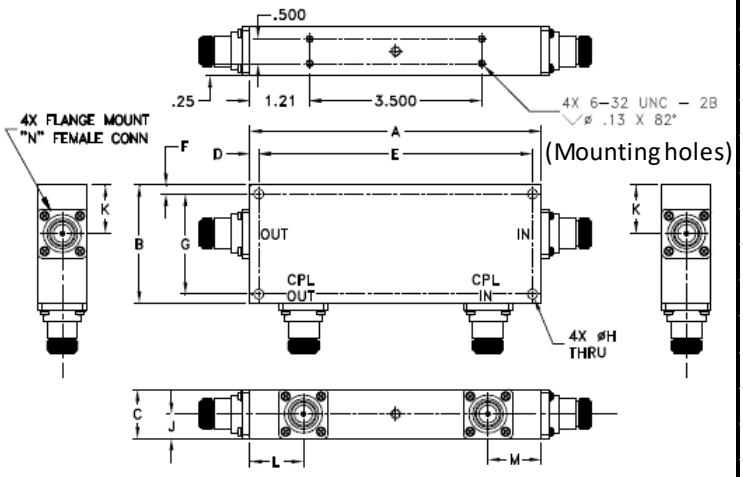
ORIGINAL PART: ZGBDC20-33HP+

Case Style HT1761



REPLACEMENT PART: ZGBDC20-372HP+

Case Style HT1760-1



*Replacement part has additional mounting holes as shown

*Updates in dimension sizes are noted in the table. All other dimension sizes are equal.

Dimension	ZGBDC20-33HP+	ZGBDC20-372HP+
A	5.58 in.	5.93 in.
B	2.50 in.	2.40 in.
E	5.215 in.	5.565 in.
G	2.140 in.	2.040 in.

CONCLUSION:

1) **FORM-FIT-FUNCTIONAL ANALYSIS$_a$**:

The replacement part has mechanical dimensional changes, see page 1.

Following is a summary of changes/improvements in the electrical specification:

Parameter	ZGBDC20-33HP+ (Original Part)		ZGBDC20-372HP+ (Replacement Part)	
	Frequency (MHz)	Spec	Frequency (MHz)	Spec
Frequency (MHz)	300-3000		300-3700	
Coupling Flatness, Max (±)	300-700	3.0	300-380	1.5
			380-600	2.0
	700-2700	0.75	600-2700	0.75
	2700-3000	0.5	2700-3700	0.5
Mainline Loss, Max (dB)	300-700	0.2	300-380	0.2
			380-600	0.2
	700-2700	0.3	600-2700	0.3
	2700-3000	0.35	2700-3700	0.35
Directivity, Min (dB)	300-700	20	300-380	20
			380-600	20
	700-2700	14	600-2700	15
	2700-3000	14	2700-3700	14
Input Power, Max (W)	300-700	250	300-380	250
			380-600	250
	700-2700	250	600-2700	250
	2700-3000	160	2700-3700	150
Weatherproof	300-3000	IP67	300-3700	None

For typical performance and graphs: See paragraphs 2 and 3

2) TYPICAL PERFORMANCE COMPARISON AT ROOM TEMPERATURE:

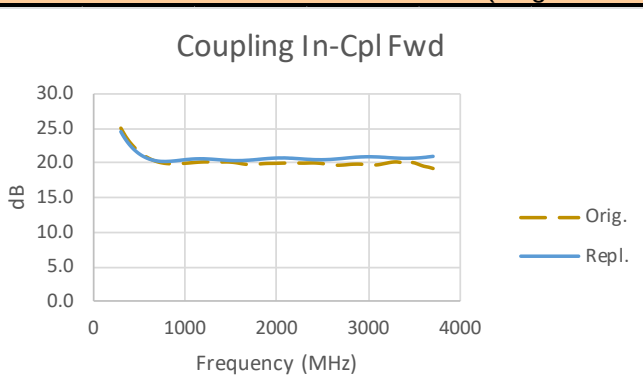
MODEL: ZGBDC20-33HP+ (RF Parameters)

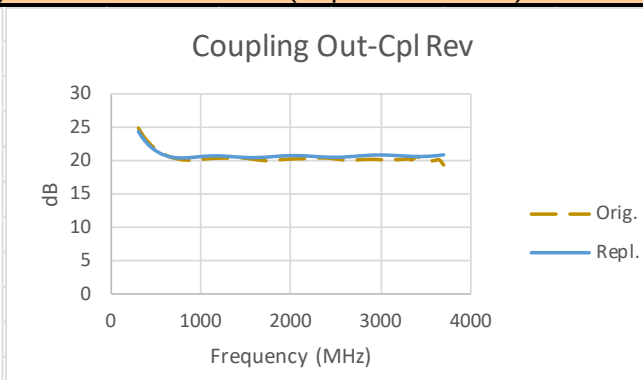
For typical performance and Graphs: See paragraphs 2 and 3

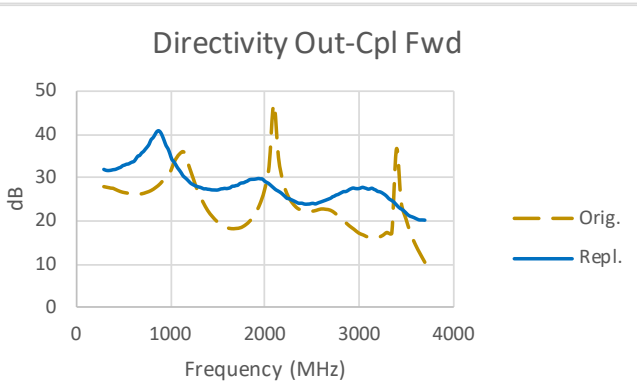
RF Parameters	Freq. (MHz)		Original Design @ 6 Units			Replacement Design @ 10 Units		
	Low	High	Min.	Ave.	Max.	Min.	Ave.	Max
Coupling (dB)	300	380	23.3	24.0	25.2	22.6	23.6	24.6
	380	600	20.8	22.4	23.6	20.4	21.6	23.0
	600	700	20.3	20.7	21.1	20.1	20.6	20.9
	700	2700	19.8	20.4	20.8	20.1	20.6	21.2
	2700	3000	19.8	20.3	20.7	20.3	20.9	21.3
	3000	3700	-	-	-	20.3	20.8	21.4
Coupling Flatness (±)	300	380	0.83	0.83	0.84	0.78	0.79	0.80
	380	600	1.23	1.25	1.26	1.07	1.08	1.10
	600	700	0.24	0.25	0.26	0.15	0.16	0.17
	700	2700	0.22	0.23	0.25	0.24	0.27	0.36
	2700	3000	0.04	0.06	0.08	0.10	0.12	0.13
	3000	3700	-	-	-	0.11	0.13	0.15
Insertion Loss (dB)	300	380	0.05	0.06	0.07	0.02	0.03	0.03
	380	600	0.05	0.07	0.09	0.03	0.03	0.04
	600	700	0.06	0.07	0.09	0.03	0.03	0.04
	700	2700	0.06	0.14	0.22	0.03	0.03	0.04
	2700	3000	0.13	0.21	0.26	0.03	0.09	0.14
	3000	3700	-	-	-	0.13	0.16	0.20
Directivity (dB)	300	380	27.2	33.1	41.4	29.3	31.3	33.0
	380	600	25.7	31.5	38.6	28.0	33.7	44.8
	600	700	25.5	28.9	33.2	27.9	37.3	52.6
	700	2700	14.5	25.6	52.6	18.1	29.4	56.9
	2700	3000	14.3	16.6	19.2	17.8	23.5	29.4
	3000	3700	-	-	-	14.7	21.6	28.2
Input Return Loss (dB)	300	380	26.4	32.9	42.6	28.5	30.9	34.9
	380	600	23.9	29.9	37.9	28.9	36.4	58.9
	600	700	24.4	31.6	43.7	31.6	40.8	50.1
	700	2700	17.1	25.3	52.4	25.5	34.9	68.4
	2700	3000	17.2	20.3	29.5	25.3	29.5	44.9
	3000	3700	-	-	-	20.9	32.6	61.6
Output Return Loss (dB)	300	380	26.4	33.4	42.7	28.3	30.7	34.4
	380	600	24.1	30.6	39.4	28.7	35.1	71.0
	600	700	24.7	32.5	44.9	32.0	40.4	50.8
	700	2700	17.3	25.0	54.7	25.0	34.5	68.7
	2700	3000	17.1	20.3	31.2	24.8	30.0	42.8
	3000	3700	-	-	-	22.3	34.3	50.0
Coupling Return Loss (dB)	300	380	24.7	30.9	40.6	30.0	31.7	33.2
	380	600	22.2	27.8	36.2	30.1	34.7	53.4
	600	700	22.4	27.9	36.4	32.6	38.3	48.9
	700	2700	17.2	24.1	44.7	25.3	33.4	53.3
	2700	3000	14.7	17.1	22.8	28.8	33.0	43.7
	3000	3700	-	-	-	24.8	31.8	55.4

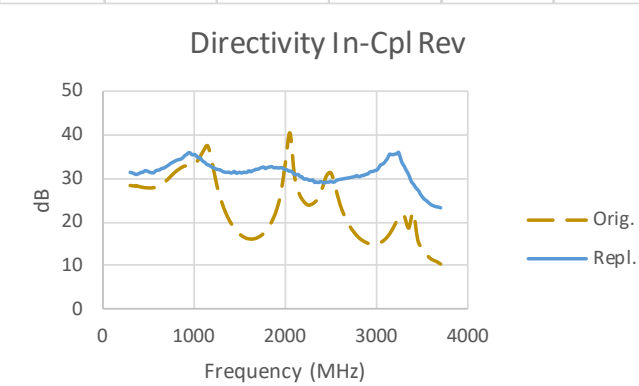
3) TYPICAL PEFORMANCE GRAPHS AT ROOM TEMPERATURE:

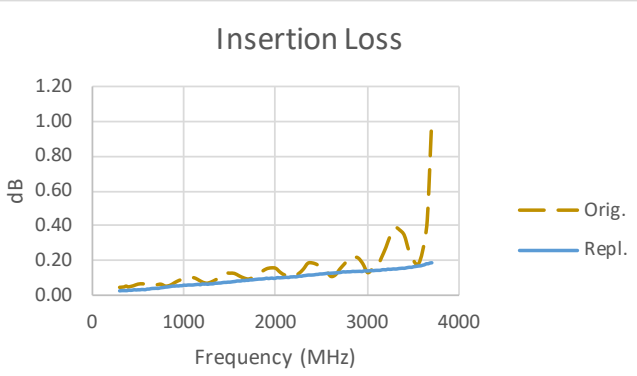
MODELS: ZGBDC20-33HP+ (Original Part) & ZGBDC20-372HP+ (Replacement Part)

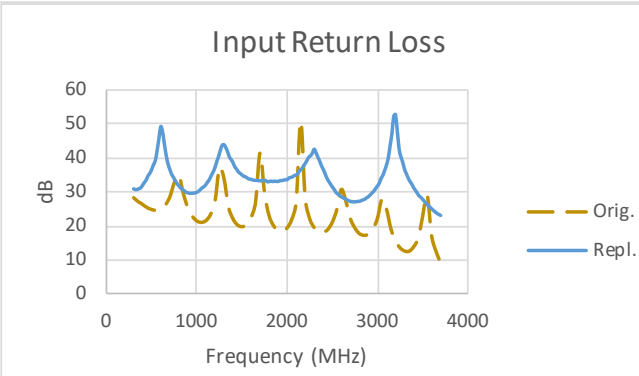


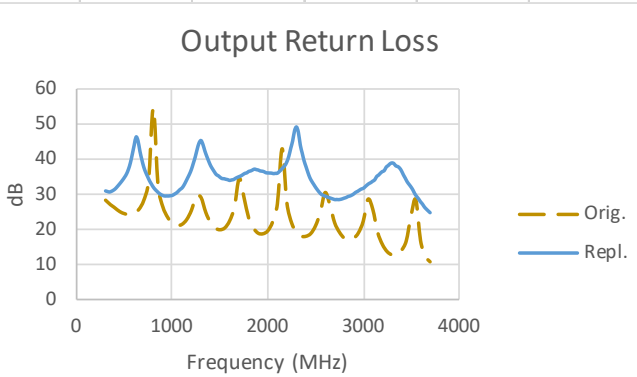


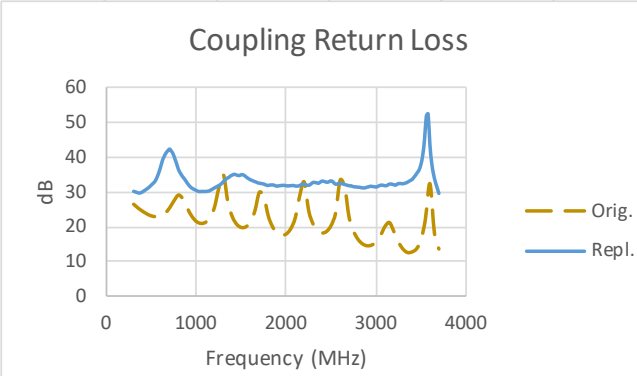












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